

~~This invention relates to the field of nucleic acid and protein detection and, more specifically, to the rapid and accurate identification of organisms by detecting differences in nuclear and organellar introns.~~

and substitute therefor the following new paragraph:

This application is a continuation of U.S. Utility Application Serial No. 09/645,055, filed on August 23, 2000, which claims priority under 35 U.S.C. § 119(e) from Provisional Application Serial No. 60/150,977, filed August 25, 1999, the contents of each which are incorporated herein by reference.

In the Claims:

Please cancel claims 1-21 and 39-47.

REMARKS

The present invention relates to a diagnostic method that involves identifying target organisms by analyzing the characteristics of their intronic region nucleic acids and comparing these characteristics to preconstructed profiles of intronic region characteristics of known organisms. In other words, the present invention involves a unique “fingerprinting” system of unknown organisms coupled with a “decoding system” for analyzing the fingerprint.

By way of an example, plants can be characterized as belonging to a certain taxonomic group on the basis of the number of leaves on a stem, the shape of the leaves, the number of petals on the flower, the color of the flower, etc. If these characteristics are observed and recorded for an unknown plant (i.e. fingerprinting), and then compared to a “profile” of known plant characteristics (i.e. the decoding system), the taxonomic group to which the unknown plant belongs can be determined.

Likewise, the present invention presents a unique approach to “fingerprinting” unknown organisms based on the analysis of particular intronic regions within their structural genes. The “fingerprint” is then compared to a preassembled “profile” of the intronic region characteristics of known organisms to determine the taxonomic group to which the unknown organism belongs.